SISTEM MAKLUMAT KELUAR MASUK PENGHUNI ASRAMA SMK KUALA KRAU MENGGUNAKAN MYKAD DAN APLIKASI MOBILE

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ABSTRACT

Sistem Maklumat Keluar Masuk Penghuni Asrama SMK Kuala Krau Menggunakan MyKad dan Aplikasi Mobile (SMAKK) is system which developed in order to replace current system at Sekolah Menengah Kebangsaan (SMK) Kuala Krau hostel. Currently, manual registration is use in SMK Kuala Krau hostel for students movement, where students have to record their movement details on the log book. The problem in the current system are, the posibility of losing students record data due to losing the log book or misplacement of it. In this manual system, warden have problem to keep track the student movement because warden have to manually analyse each record one by one. Therefore, SMAKK is develope to overcome the problem. This system is able to record student information by using Malaysia Government Multipurpose Card (MyKad). This system able to capture date and time when student register in/out. In/out information are recorded in a database, which provides data manipulation and report generating. The benefits of this system are to provide organized view of student records and reducing the time spent on managing student in/out information and can be access using PDA which can help warden to monitoring in/out activities easily.

ABSTRAK

Sistem Maklumat Keluar Masuk Penghuni Asrama SMK Kuala Krau Menggunakan MyKad dan Aplikasi Mobile (SMAKK) di bangunkan bagi menggantikan sistem sedia ada yang digunakan di asrama SMK Kuala Krau. Sistem sedia ada yang digunakan adalah dengan merekod maklumat penghuni asrama yang keluar masuk secara manual dimana semua maklumat di simpan di dalam buku log. Sistem ini mempunyai beberapa kelemahan seperti risiko kehilangan maklumat kerana maklumat-maklumat hanya disimpan dalam buku log. Kebiasaannya buku log akan digunakan dalam tempoh setahun iaitu sehingga penghujung sesi persekolahan setiap tahun. Berikutan itu akan berlaku masalah bagi pihak pengurusan untuk membuat analisis maklumat memandangkan penyimpanan maklumat tidak mempunyai pembahagian yang spesifik. Dengan itu, Sistem Maklumat Keluar Masuk Penghuni Asrama SMK Kuala Krau Menggunakan MyKad dan Aplikasi Mobile di bangunkan bagi menyelesaikan masalah yang berlaku di SMK Kuala Krau. Sistem ini mempunyai keupayaan merekod maklumat keluar masuk penghuni dengan menggunakan Malaysia Government Multipurpose Card (MyKad). Sistem ini akan merekod waktu dan tarikh penghuni keluar/masuk secara automatik dan semua data akan disimpan di dalam pengkalan data. Sistem akan menghasil report bulanan bagi memudah pihak pengurusan asrama membuat analisis rekod keluar masuk penghuni. Antara kebaikan sistem ini ialah menghasilkan sistem yang teratur bagi simpanan maklumat keluar masuk penghuni dan boleh di akses menggunakan PDA.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Nowadays, many organizations have their own system to manage visitor entering their premises. This system can be embedded into SMK Kuala Krau hostel in order to manage student that in and out from the hostel. Common system use in SMK Kuala Krau hostel is by registering and recording student information in a log book. In addition, student is required to hand over their identification card and hostel card to be kept by the guard when their out from the hostel. This registration activity has some weaknesses such as there is a possibility of misplacement of log book during guard shift exchange. Therefore, this situation have motivate to develop an electronic system namely *Sistem Maklumat Keluar Masuk Penghuni Asrama SMK Kuala Krau Menggunakan MyKad dan Aplikasi Mobile* (SMAKK) to replace current system. This system able record student information by capture data from Malaysia Multipurpose Card (MyKad) and store them into database. The information then can be retrieve using PDA.

1.2 Problem Statement

Currently, the management of SMK Kuala Krau hostel use manual system by registering and recording student in/out information in a logbook. This current system has some weaknesses such as there is a possibility of losing data which only stored in the log book. Usually, student required to write their name, IC number, time and date in log book at the post guard when go out form hostel and require leaving hostel card. Sometime there is a mistake when they write their details and maybe there is incorrect information is written since student can simply write different identity. There is also a case which students use other student hostel card and warden did not trace it. There is also a problem to identifying those student that back to the hostel after given time. This is because there are some students that write incorrect information when they check in. This current system required warden to generate report manually by analyse the information of student that in/out on that particular week or month. This is difficult and consume time.

1.3 Objective

The objectives of this system are

1) To provide a computerized system that can record in and out information of student by capturing data from MyKad.
2) To provide system that can be use to facilitate and monitoring student information that goes in and out of hostel via mobile.
3) To produce overall report of in and out information.

1.4 Scope

The scope of this system is it will be use by two types of users at SMK Kuala Krau hostel, guard or student to register student in and out of the hostel using MyKad. Warden to facilitate and monitoring student information that goes in and out of hostel. This system is stand alone application with mobile technology which will be developed using Microsoft Visual Studio .NET 2008 and SQL Server 2005 as the database platform.

1.5 Thesis Organization

This thesis consists of six (6) chapters.

Chapter 1 will discuss on the introduction of system and research. This chapter has five (5) elements that state project introduction, problem statement, objective, scope and also organization of the thesis.

Chapter 2 will explain about the review of the project that has been chosen. There have two aspect must be concern to do the research. The two aspects are system/already research and technique/method/equipment/technology. This chapter also can explain about appropriate technique / method / equipment or technology will be use in implementing this project. Beside that, this chapter also gives explanations about the further researcher done.

Chapter 3 will be discuss on approach and design to develop this system. This content consist of technique for implementation the projects and the user design.

Chapter 4 will explain on the documentation of all process that required in develop the system. Generally, this chapter explains about project development that has been designed in chapter 3.

Chapter 5 will discuss on result that has been received and all data analysis. The content that must have in this chapter consists of analysis of result, difficulty of projects and improvement of project.

Chapter 6 will explain about the overall conclusion of the develop system.

1.6 Conclusion

SMAKK system is a system which developed in order to replace current system at SMK Kuala Krau hostel. This system is able to record student information by using Malaysia Government Multipurpose Card (MyKad) and able to capture current date and time when student register in/out. This system is developed for SMK Kuala Krau hostel. This system will be developed using Microsoft Visual Studio .NET 2008 and SQL Server 2005 as the database platform.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will explain about the existing system, technology and the tools that will be used in order to develop this system.

As an overall, SMAKK is developed to replace traditional in/out registration and student in/out information management activities in SMK Kuala Krau hostel. This system is able to record student information by using (MyKad). The information will be retrieve from MyKad by using MyKad reader. Besides, this system will help the warden to get inform about student that in and out from hostel. All the information can be retrieve by warden via mobile in order to facilitate and monitoring student that in and out of the hostel anytime anywhere. By using this system, student only need to insert their MyKad into Mykad Reader then the system will automatically retrieve their information and record into system. The information then will be send to the warden and it can be retrieve via PDA. Warden can gathered student information that in and out on that particular day and can trace those who come back to the hostel after given time. This system will produce monthly report. Indirectly, this system can help the hostel management to decrease discipline problem among their students.

In term of technology, this system will developed using Microsoft Visual Studio .NET 2008 for the interface, Visual Basic .NET for the programming language and SQL Server 2005 for the database platform.

2.2 Studies on Existing System

Studies on existing system will explain detail on current system use in SMK Kuala Krau and the existing of any other related system in order to get an idea and visualization on how to develop the proposed system.

2.2.1 Manual System

Currently, SMK Kuala Krau hostel did not have any electronic system in recording in and out information of their students. Manual system means that all the data stored in a log book which consist of a collection of records.

Student that stays in SMK Kuala Krau hostel is allow to go back home once a month following the date that have been state by the hostel management and out to town once a week on Saturday from 8am to 12pm. Students required submitting hostel card and write their in and out information in log book. If student want to go out on given day they must get permission by fill permission form. Students have to be in the hostel before 6 pm at last day of their holiday and at 12 pm for outing. If student back to hostel after given time they will be punished.

Sometime warden cannot trace student that back after given time, this is because sometime student write incorrect information and difficult to read due to poor handwriting. Current system did not provide reports that summarize in and out activity that has been made in that particular week or month. A weekly report will be generated by the warden by analyse manually the information of student that in/out

on that particular week. It may consume time and the probability of mistake is at high rates.

2.2.2 MyKad Based Registration System

The MyKad-based Registration System is a reliable and efficient system that can read data from MyKad for registration purposes. By inserting the MyKad into a special reader, the user's card details are retrieved and displayed on the screen. The information retrieved from the card can be stored for use at a later time. [1]

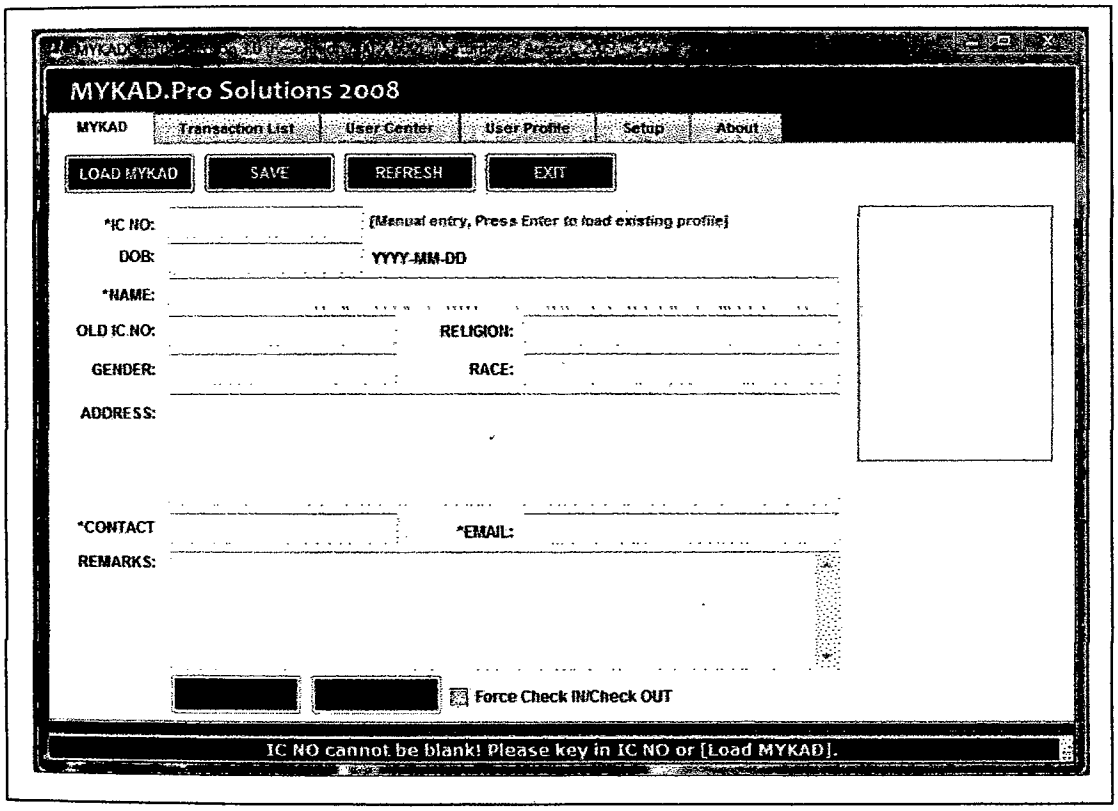

Figure 2.1: Interface of MyKad Based Registration System [1]

Figure 2.1 show the interface of MyKad Based Registration System. This system manages to record visitor information electronically by using MyKad. These systems are able to keep a log of all visitors, track visitors when entering and exiting the premises. Data are retrieved accurately and fast while reducing human errors improve customer services with faster visitor processing time and enhance reporting capabilities.

2.2.3 Digital Visitor Information Management System (VIMS) Application and Design

Electronic Visitor Information Management System (E-VIMS) using MyKad is an independent management solution for managing information and keeping track of visitor visiting a premise. Proper visitor management enhances the level of security enforced in a premise. E-VIMS enable security officer from the Security Department to capture visitors' details electronically from visitors MyKad using a smart card reader, for registration purpose. The data retrieves from MyKad are name, identity card number, address, gender and photo. E-VIMS enable only non confidential data to be captured from visitor's MyKad and stored in the database. Besides, the system keeps track of visitor's status within the premise, by recording the time visitor checked in, checked out and visiting purpose. Another function of E-VIMS is searching of visitor's record using keywords such as visitors' name and their vehicle registration number. For management purposes, VIMS is able to produce daily and monthly management reports based on records in the database. [2]

There are two types of interfaces in E-VIMS which are Admin Module and Guard Module. The interface for Admin Module is shown in Figure 2.2. The Admin Module is meant for Admin user, for the use of viewing of visitor information in premise, searching of visitor and generating report. The interface for Guard Module is shown in Figure 2.3. This module is designed to be used by guards at the guard terminal for the use of registering visitor, viewing of information of visitor in premise, and checking out visitor.

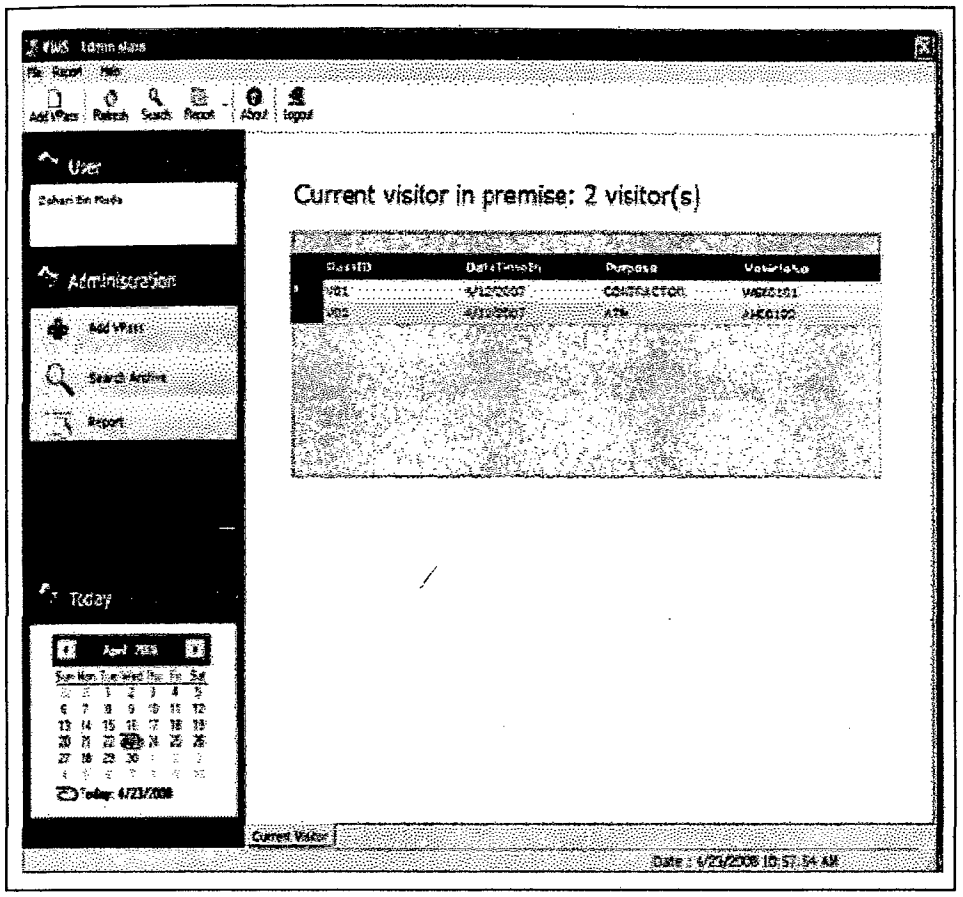

Figure 2.2: Interface for admin module [2]

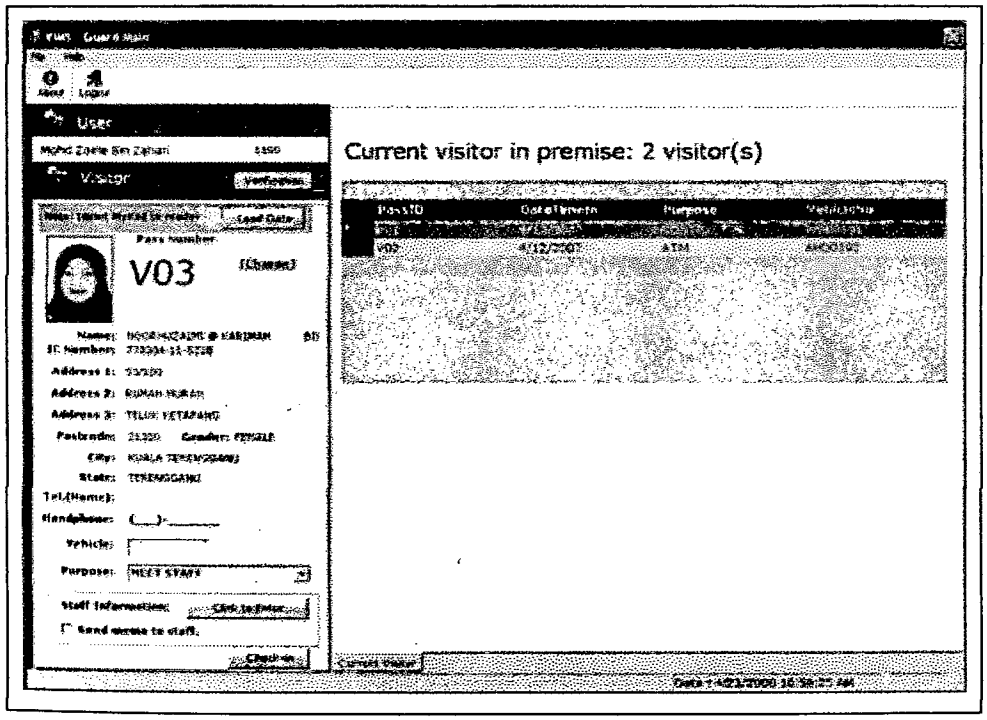

Figure 2.3: Interface for guard module [2]

2.2.4 *Sistem k-Kedatangan*

K-Kedatangan (K-Attendance) is a system used in UniMAP to record staffs' attendances around the campus. It used smart card technology that merged two systems, the IUS-Staf and NPower System. It has two subsystems, the K-Kedatangan's engine and web display system that work together to make sure it run smoothly. The engine functioned as a system that updated the needed data from smart card scanning routine by users. The web displays the 'in-out' record and let the users to check their attendances status through the portal. [3]

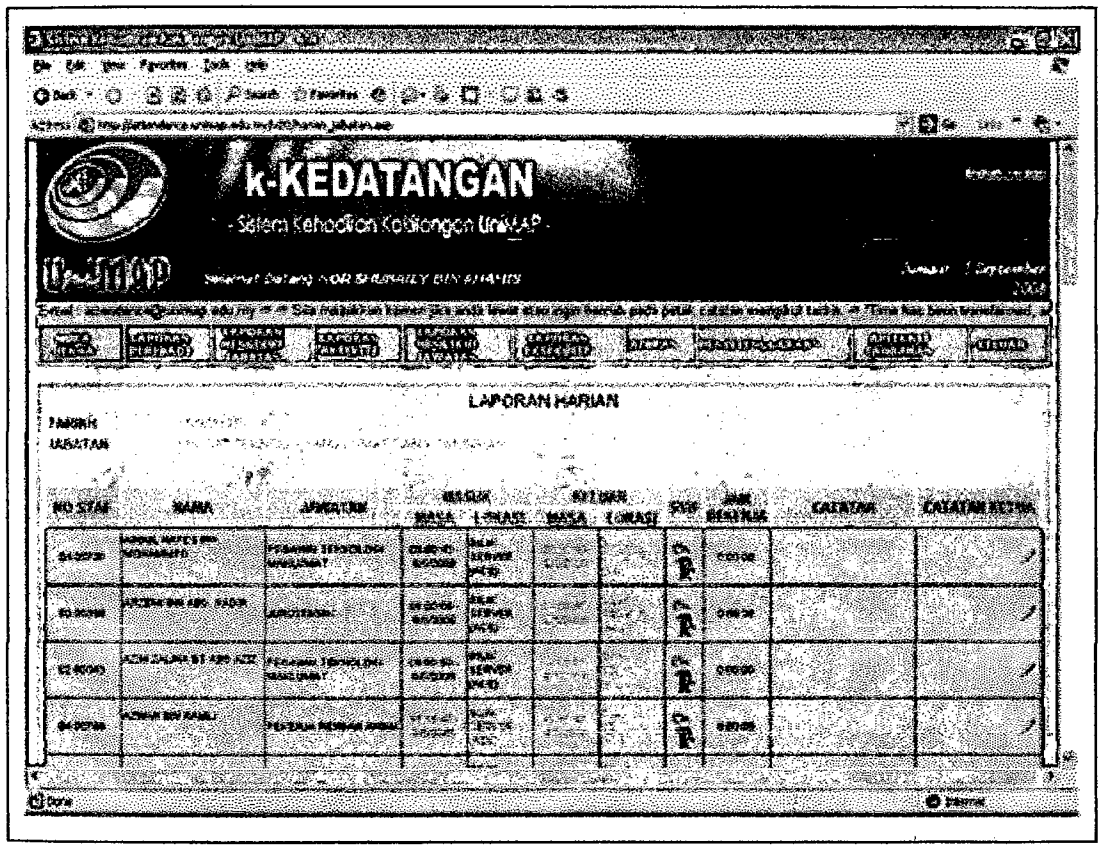

Figure 2.4: Interface for k-Kedatangan System [3]

Figure 2.4 above shows the interface of *Sistem k-Kedatangan* in UniMAP. These systems are use to recorded attendance of student and staff in UniMAP. This system use card reader to retrieve data from smart card. Sistem k-Kedatangan combines several recording method namely smart card and also biometric

(fingerprint). All smart card and fingerprint scanner send data to server located in Kubang Gajah using Wide Area Network UniMAP network system. [3]

This system provides several type of report which divides into two category k-Kedatangan Staff and k-Kedatangan Pelajar as shown in Table 2.1. For staff category, the report will be generates are *Laporan lewat, Laporan pergerakan and Laporan statistik kelewatan dan lewat.* For student, the report produce are *Laporan kehadiran mengikut kelas dan kumpulan, Laporan ketidakhadiran, Laporan peratusan kehadiran sepanjang semester, Laporan kehadiran pensyarah* and *Laporan perbandingan kehadiran pelajar.* This report is important for the top management in order to monitor their staff and student attendance for each activity. The report is generating daily, weekly and monthly.

Table 2.1: Report provide by *Sistem k-Kedatangan* [3]

Category	Report provided
k-Kedatangan Staf	- *Laporan harian* - *Laporan mingguan* - *Laporan bulanan* - *Laporan lewat* - *Laporan pergerakan* - *Laporan statistik kelewatan dan lewat*
k-Kedatangan Pelajar	- *Laporan kehadiran mengikut kelas dan kumpulan* - *Laporan ketidakhadiran* - *Laporan peratusan kehadiran sepanjang semester* - *Laporan kehadiran pensyarah* - *Laporan perbandingan kehadiran pelajar*

2.3 Studies on Device

Studies on device will be explained generally about the device that will be use in this system.

2.3.1 Personal Digital Assistant (PDA)

A personal digital assistant (PDA) is a handheld computer, also known as a palmtop computer. Newer PDAs commonly have colour screens and audio capabilities, enabling them to be used as mobile phones (Smartphone), web browsers, or portable media players. [1] PDAs can be used as personal information management (PIM) systems, data entry tools and storage devices, and other user-defined purposes. Although PDAs have different approaches for data entry, there is no single data entry method that is appropriate for large amounts of data. [4]

2.3.2 MyKad

Figure 2.5: MyKad Sample

MyKad or Government Multipurpose Card is the official compulsory identity card of Malaysia. Figure 2.5 shows the sample of MyKad. MyKad is regarded as the world's first smart identity card. There is a microchip embedded in

the MyKad which contains several items of data including biometrics. A MyKad is issued and carried as soon as the holder reaches the age of 12. [5]

Every MyKad carries a unique 12 digit number. The first 6 digits indicate the date of birth (YYMMDD). The second 2 digits represent the place of birth of the holder or the country of origin and the last group of 4 digits is a serial number in an unidentified pattern, with the last digit shows an odd number for a male, while an even number is given for a female. [6]

In addition to personal identification, the MyKad has a smart chip which can be used for additional applications such as Cash Card, Travel Document and Driver's License. [6]

To retrieve data from MyKad, it must use additional device known as MyKad reader. MyKad reader is a device that provides electronic connection between MyKad and the application through existing input and output ports. It is also known as terminal which reads data from the smart card to the application [2]. There are various types of reader such as card readers with or without a biometric sensor. Those with biometric sensors can scan and verify the user's thumbprint with the thumbprint encoded in the MyKad chip.

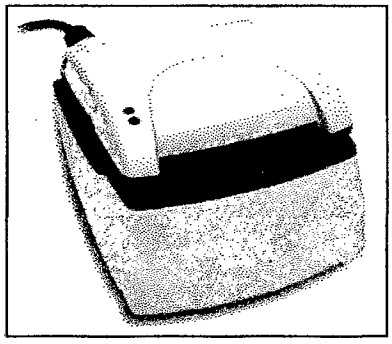

Figure 2.6: SRC21U Smart Card Reader [7]

Figure 2.6 above shows SRC21U Smart Card Reader, which able to capture data from Mykad/smart card. SRC21U Smart Card Reader is a USB device interface for the communication between a personal computer and a smart card. SRC21U allows simple access to the open data in MyKad by using MyKad API. It is also very simple to use and install. SRC21U provides the reader with additional software or easy installation. It connects to the PC via the standard RS232port or USB. It is compatible with ISO7816 cards and the MyKad because it has an integrated smart card reader that supports it. [7]

2.4 Development Tools

A software development tool is a program or application that going to be use to build a system. The tools use to create an interface and the engine of the system.

2.4.1 Adobe Dreamweaver

Adobe Dreamweaver is a web development application originally created by Macromedia. Dreamweaver is available for both Mac and Windows operating systems. Adobe Dreamweaver support for web technologies such as CSS, JavaScript, and various server-side scripting languages and frameworks including ASP and PHP. [8]

Dreamweaver allows users to preview websites in locally-installed web browsers. It can be view in many browsers that are installed on their computer. It also has some site management tools, such as the ability to find and replace lines of text or code by whatever parameters specified across the entire site, and a template feature for creating multiple pages with similar structures. The behaviours panel also enables use of basic JavaScript without any coding knowledge. [8]